भारतीय मानक
Indian Standard

IS 18228 : 2023

सोया बड़ी एवं सोया ग्रेन्यूल्स — विशिष्टि

Soy Nuggets and Soy Granules — Specification

ICS 67.060

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May 2023 **Price Group 5**

Foodgrains, Allied Products and Other Agricultural Produce Sectional Committee, FAD 16

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Foodgrains, Allied Products and Other Agricultural Produce Sectional Committee had been approved by the Food and Agriculture Division Council.

Soy nuggets/chunks/*badi* are prepared using defatted soy flour. Soy nuggets extend nutritional benefits on account of its high protein content. Soy nuggets are made by a process known as 'Extrusion cooking'. This is a process by which pre-conditioned defatted soy flour is subjected to high-temperature-short-time cooking. As it emerges from the dies it passes from a high pressure to a low pressure zone and this result in partial cooking of the product. Manufactured nuggets are dried and graded on sieve and the sieved material (broken pieces of nuggets) are packed as soy granules and whole nuggets as nuggets/chunks/soy *badi.*

Soy nuggets have been commercially available in Indian market for over five decades. This highlights the need for a standard that would benefit both the consumer and the manufacturer.

In the formulation of this standard, due consideration has been given to the provisions of the *Food Safety and Standards Act,* 2006 and the Rules and the *Legal Metrology (Packaged Commodities) Rules*, 2011. However, this standard is subject to the restrictions imposed under these, wherever applicable.

The composition of the committee responsible for formulation of the standard is listed in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SOY NUGGETS AND SOY GRANULES — SPECIFICATION

1 SCOPE

This standard prescribes the requirements and methods of sampling and test for soy nuggets and soy granules.

2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed in Annex A.

3 TYPES

3.1 Soy nuggets shall be of two types, namely:

a) Soy nuggets — Diameter of soya nuggets shall be maximum 15 mm; and
b) Mini soy nuggets — Diameter of soya nuggets shall range between 8 mm and 14 mm.

3.2 Soy granules shall have a minimum length of 7 mm.

4 REQUIREMENTS

4.1 Description

Soy nuggets and soy granules shall be prepared using defatted soy flour. Soy nuggets shall have characteristic aroma and flavour and shall be free from mould, living and dead insects, insect fragments, rodent infestation and added colouring matter.

4.2 Water conforming to IS 14543 or IS 13428 or IS 10500 with or without demineralization shall be used for manufacturing soy nuggets.

4.3 The products shall be manufactured under hygienic conditions as per IS 2491.

4.4 Soy nuggets and soy granules shall comply with the requirements specified in Table 1 and Table 2.

5 PACKING

Soy nuggets shall be packed in closed, clean and dry containers made in such a way as to protect them from breakage, contamination, absorption of moisture through the packing materials and should not impart any objectionable odour and taste to the packed product. The soy nuggets shall not come in direct contact with the packaging materials other than a paper, cellulose film, aluminum foil laminates (*see* IS 8970). In the case of the plastic material, only food grade plastic (*see* IS 10171) shall be used.

6 MARKING

6.1 The ink used for marking shall be of such quality which may not contaminate the product. Each package shall be suitably marked legibly and indelibly to give the following information:

a) Name and type of the product (*see* **3.1** and **3.2**);
b) Name and address of the manufacturer;
c) Date of manufacture or packaging;
d) Lot/batch number;
e) Net quantity;
f) Expiry/use by date;
g) Storage instructions; and
h) Any other requirements under the *Food Safety and Standards (Labelling and Display) Regulations,* 2020 and the *Legal Metrology Act,* 2009 and Rules framed thereunder.

6.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

7 SAMPLING

Representative samples of the material shall be drawn and tested for conformity to this standard as prescribed in IS 14818.

8 TESTS

8.1 Tests shall be carried out as prescribed in col (4) of Table 1 and col (4) of Table 2.

8.2 Quality of Reagents

Unless specified otherwise, pure chemicals shall be employed in tests and distilled water (*see* IS 1070) shall be used where the use of water as reagent is intended.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results.

Table 1 Requirements for Soy Nuggets and Soy Granules
(*Clause* 4.4)

Sl No.	Characteristics	Requirements	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass *Max*	6.0	IS 12711
ii)	Protein, percent by mass, *Min*	50.0	IS 7219
iii)	Total fat, percent, *Max*	1.0	IS 1224 (Part 1)
iv)	Total ash content, percent by mass, *Max*	8.0	IS 12711
v)	Alcoholic acidity, percent by mass, *Max*	3.5	Annex F of 1155
v)	Trans fat, *Max*	Absent	Annex F of IS 10633
vi)	Urease activity, (change in *p*H unit), *Max*	0.5	Annex D of IS 7837

Table 2 Microbiological Requirements for Soy Nuggets and Soy Granules
(*Clause* 4.4)

Sl No.	Characteristics	Requirements	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Total Plate Count, cfu/g, *Max*	50 000	IS 5402 (Part 1)
ii)	Coliform Count, cfu/ g, *Max*	10	IS 5401 (Part 1)
iii)	*Salmonella sp.,* per 25 gram	Absent	IS 5887 (Part 3 / Section 1)

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*
IS 1070 : 1992	Reagent grade water — Specification (*third revision*)
IS 1224 (Part 1) : 1977	Determination of fat by the gerber method: Part 1 Milk (*first revision*)
IS 2491 : 2013	Food hygiene — General principles — Code of practice (*third revision*)
IS 5401 (Part 1) : 2012/ISO 4832 : 2006	Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms: Part 1 Colony count technique (*second revision*)
IS 5402 (Part 1) : 2012/ISO 4833 – 1 : 2013	Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Microorganisms — Colony count technique at 30 °C (*second revision*)
IS 5887 (Part 3/Sec 1) : 2020/ISO 6579-1 : 2017	Methods for Detection of Bacteria Responsible for Food Poisoning: Part 3 Horizontal method for the detection, enumeration and serotyping of Salmonella, Section 1 Detection of Salmonella spp. (*third revision*)
IS 7219 : 1973	Method for determination of protein in foods and feeds
IS 7837 : 2013	Edible full — Fat soya flour — Specification (*first revision*)
IS 8970 : 1991	Aluminum foil laminate for packaging — Specification (*first revision*)
IS 10500 : 2012	Drinking Water — Specification (*second revision*)
IS 10633 : 2017	Vanaspati — Specification (*third revision*)
IS 10171 : 1999	Guide on suitability of plastics for food packaging (*second revision*)
IS 12711 : 1989	Bakery products — Methods of analysis
IS 13428 : 2005	Packaged Natural Mineral Water — Specification (*second revision*)
14543 : 2016	Packaged drinking water (other than packaged natural mineral water) — Specification (*second revision*)
IS 14818 : 2017/ISO 24333 : 2009	Cereal and cereal products sampling (*first revision*)

ANNEX B

(*Foreword*)

COMMITTEE COMPOSITION

Foodgrains, Allied Products and Other Agricultural Produce Sectional Committee, FAD 16

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ICAR-Central Institute of Post-Harvest Engineering & Technology (CIPHET), Ludhiana	Dr Nachiket Kotwaliwale **(*Chairperson*)**
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